



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/655,402	09/05/2000	Seung Woog Choi	K-214	8209
34610	7590	02/09/2004	EXAMINER	
FLESHNER & KIM, LLP			D AGOSTA, STEPHEN M	
P.O. BOX 221200			ART UNIT	
CHANTILLY, VA 20153			PAPER NUMBER	
			2683	

DATE MAILED: 02/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/655,402

Applicant(s)

CHOI, SEUNG WOOG

Examiner

Stephen M. D'Agosta

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 1-28-04 have been fully considered but they are not persuasive:

1. A more favorable outcome may occur if claims 12-14 were added to claim 11. When combined as a whole, they appear to be novel over the prior art cited.
2. The applicant argues (claims 1 and 11) that Baum does not disclose gain control limitations per their claims. The examiner disagrees because he interprets Baum as disclosing providing gain control that determines a gain which is acceptable to all base stations involved in the handover (see Abstract, ie. raise, lower, keep the same). Just because Baum can lower the gain does not mean that it must be lowered in every instance. Hence, Baum has the ability to provide better performance/control than that which is claimed by the applicant.
3. The applicant argues that Baum does not provide reverse link power control or why one would use it. Firstly, forward and reverse power controls are well known in the art and one skilled would use both concurrently. Secondly, Weaver provides a system that controls forward/reverse link coverage areas which depends upon power control (C21, L60 to C22, L13). Lastly, Tiedemann teaches forward/reverse power control (figure 8 to 10D and C15, L63 to C19, L45).
4. The applicant argues that Tiedemann teaches decreasing power control. While the examiner agrees, he has put forth an argument (in #1 above) whereby prior art discloses measuring and determining what course of action to take (ie. raise, lower, keep the same). Power control does not just teach decreasing power – the examiner has clearly shown which teachings are relevant and should be combined.
5. The applicant argues that all limitations are not taught. The examiner disagrees – the Office Action shows where each claim limitation is disclosed and how it is being applied. A prima facie case has been established.

6. The applicant further argues that it is improper to combine the references and that they do not teach their claim limitations. The examiner disagrees since the prior art cited, when combined, discloses all their limitations. The combination is proper since the prior art all deal with the same field of endeavor (RF cellular communications) and solve similar problems (ie. power control and hand-offs). Hence the combination is valid and motivation exists (eg. no hindsight reasoning was used).

7. The last rejection is provided below as information only.

Claim Rejections - 35 USC § 103

Claims 1-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Bojerd US 5,946,622 in view of Baum et al. US 6,510,319 and Weaver Jr. et al. US 5,917,811 (hereafter Bojerd, Baum and Weaver **and Tiedemann Jr. et al. US 5,999,816**).

As per **claims 1 and 11**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) **but is silent on** performing power control such that a transmission power level of said mobile station is not lowered, if said mobile station is determined to be within said soft handoff region and if a soft handoff of said mobile station is required.

Baum teaches optimizing "forward link" power levels during soft handover (title) whereby a power control system determines a forward link gain acceptable to all base stations involved in the soft handoff call (abstract, which is interpreted by the examiner to read on transmission power is not lowered) **but does not disclose reverse link power control**.

With further regard to claim 11, Bojerd is **silent on** EHDM and HCM messages AND setting a reverse link coverage of said picocell greater than a forward link coverage of said picocell if said mobile is determined to be within said handoff region and if a soft handoff of said mobile is required.

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

The examiner takes **Official Notice** that the EHDM and HCM messages are known in the art and would be used by one skilled in the art for this invention.

Tiedemann teaches EHDM and HCM messages used for handoff operations (C7, L26-38, C9, L29-46 and C14, L13-31) and also discloses both forward and reverse power control (figures 8 to 10D and C15, L63 to C19, L45).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that forward/reverse power control is not lowered and EHDM/HCM messages are used, to provide dynamic power control (ie. power up, down, same) via known messaging standards during soft handoff in macro/picocell areas.

As per **claim 2**, Bojerd teaches claim 1 **but is silent on** wherein the transmission power level of said mobile is not lowered during a transmission of an extended handoff direction message and a handoff complete message.

The examiner takes **Official Notice** that the EHDM and HCM messages are known in the art and would be used by one skilled in the art for this invention.

Tiedemann teaches EHDM and HCM messages used for handoff operations (C7, L26-38, C9, L29-46 and C14, L13-31) and also discloses both forward and reverse power control (figures 8 to 10D and C15, L63 to C19, L45)..

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that EHDM and HCM messages are used, to support known messaging standards.

As per **claims 3, 4, 12 and 15**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) **but is silent on** performing power control such that a transmission power level of said mobile station is maintained or increased.

Baum teaches optimizing forward link power levels during soft handover (title) whereby a power control system determines a forward link gain acceptable to all base stations involved in the soft handoff call (abstract, which is interpreted by the examiner to read on transmission power is maintained or increased).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic power control.

As per **claims 5-7**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) and picocell base stations that have the ability provide RF cellular communication support (eg. power control) for any mobile unit within its region (C1, L60-66) **but is silent on** power control and forward/reverse link coverage.

Baum teaches optimizing forward link power levels during soft handover (title) whereby a power control system determines a forward link gain acceptable to all base stations involved in the soft handoff call (abstract, which is interpreted by the examiner to read on transmission power is maintained/increased).

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic power control and specific coverage area(s).

As per **claims 8-10, 13-14 and 16-19**, Bojerd teaches claim 12 **but is silent on** controlling transmission power of a base station which provides service to said picocell to set said forward link coverage greater than/relatively equal to a size of said picocell.

Baum teaches optimizing forward link power levels during soft handover (title) whereby a power control system determines a forward link gain acceptable to all base stations involved in the soft handoff call (abstract, which is interpreted by the examiner to read on transmission power is maintained/increased).

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic coverage area(s).

As per **claim 20**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service, (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) **but is silent on** setting reverse link coverage of picocell greater than forward link coverage for soft handoff wherein controlling transmission power of BTS of picocell to set forward link coverage relatively equal to a size of said picocell and setting reverse link coverage greater than forward link coverage by not attenuating signals received by base station AND performing power control such that a transmission power level of said mobile station is not lowered, if said mobile station is determined to be within said soft handoff region and if a soft handoff of said mobile station is required.

Baum teaches optimizing forward link power levels during soft handover (title) whereby a power control system determines a forward link gain acceptable to all base stations involved in the soft handoff call (abstract, which is interpreted by the examiner to read on maintains or increases transmission power).

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic power control during soft handoff in macro/picocell areas.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SMD
2-3-04



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600